The Effect of Turkish Central Bank's communication on macroeconomic variables: Text Mining Approach.

Abstract: The application of text or unstructured data in economics and finance is a recent phenomenon and is developing steadily. There are various ways in which researchers and practitioners have used text analysis techniques to understand the communication strategies and policies of central banks. However, the complexity of the unstructured data deters many academics from using it since it is very evolved and entails a lot of technical programming to turn unstructured, messy, and noisy data into meaningful insight that could be used for prediction, description, prescription, or causal effect relations. This complexity dissuades a lot of social science researchers from utilizing text data.

The purpose of this study is to investigate the impact of the Turkish central bank's press release on the Turkish stock markets, inflation, and the Turkish Lira US dollar exchange rate volatility. The study extracts 1154 pdf communication releases using text mining from 2002 to 2022 from the Turkish central bank's website. The study employs machine learning models such as Decision Tree, Random Forest, Neural Networks, and Support Vector Machines to predict the impact of the bank's communication on the Turkish financial variable.

Keywords: NLP, Central Bank's communication, Stock Market, Machine Learning